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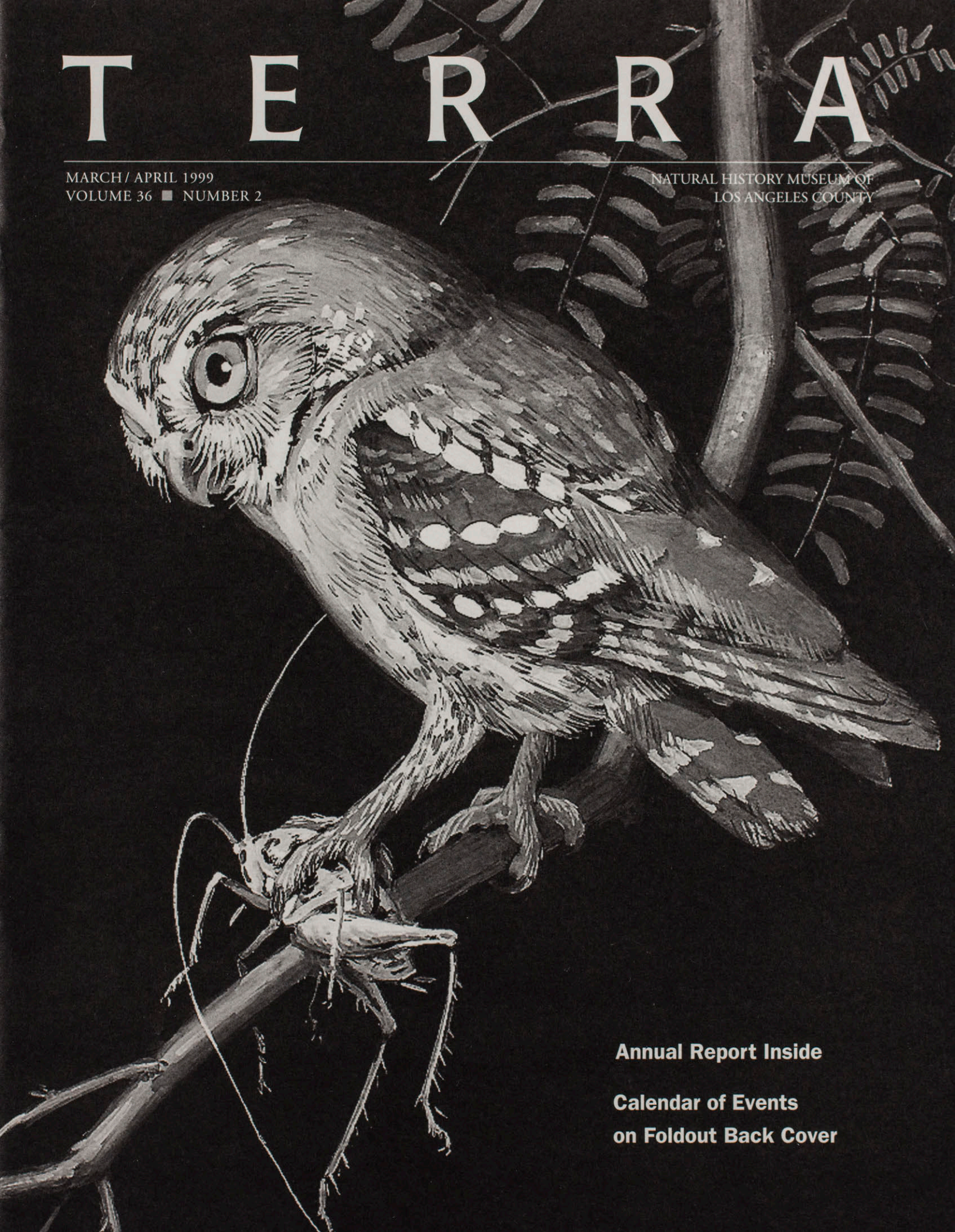
NATURAL HISTORY MUSEUM OF
LOS ANGELES COUNTY



Annual Report Inside

Calendar of Events on Foldout Back Cover

MUSEUM ON THE MOVE

■ MEMBERS OPEN HOUSE

On Saturday, April 17, from 6 to 9:30 p.m., the Exposition Park museum is again opening its doors and cupboards, on all five floors, for museum members only. This annual event offers a chance to meet curators and other staff members as well as see collection items, exhibition studios and workshops, and educational resources not normally on display. Your invitation will be mailed in March; please remember to bring your membership card for admission.

■ 1999 DINOSAUR BALL

Celebrate the Natural History Museum's 85th anniversary on Saturday, May 1, when the museum's Alliance Board of Directors hosts the Seventeenth Annual Dinosaur Ball in the beautiful halls of the Exposition Park museum. Proceeds from this gala evening fund-raising event provide vital support for the museum's scientific research projects, exhibition development, and educational programs. Last year, the ball provided more than $375,000 to the museum's annual fund.

The museum thanks the individuals, foundations, and corporations who have already shown their support by purchasing tickets, which start at $300 per person. To be listed in the formal program, Diamond Couple donations ($1,000 or more) must be received by April 5. For more information about the ball, please call the Development Office at 213/763-3307.

■ SUPPORT FOR EDUCATION

The museum's innovative, hands-on educational program has recently received more than $70,000 in grants and gifts from several individuals and foundations. We are grateful for the generosity of Nancy and Jim Welsh ($20,000), the Amgen Foundation ($10,000), the Boeing Employees Community Fund ($10,000), the Times Mirror Foundation ($7,500), the Norris Foundation ($10,000), and Karen Tenenbaum Gale ($16,000 in support of the Mayer and Labelle Tenenbaum Student Internship).

Each year, the Education Division offers a wide range of enriching programs, such as Discovery Days, visits to schools, workshops for educators, and classes for adults and children. Most sessions involve contact with real artifacts or specimens and are designed to emphasize the connection between the museum's collections and the scholarship that informs them.

Upcoming educational programs are described on the museum's web site, at www.nhm.org. If you are considering making a contribution to support any of the Natural History Museum's programs, please contact the Development Office at 213/763-3307.

PAGE MUSEUM DISCOVERY DAY

Saturday, April 24, 10 a.m. to 4 p.m.
Members Only Preview: 9 to 10 a.m.

Here's a chance to have your minerals, rocks, shells, and fossils identified by museum experts. A team of paleontologists and mineralogists from the Page and Natural History Museums will be on hand to examine your discoveries and tell you something about them; although monetary appraisals cannot be given, you are sure to gain a new appreciation for your finds.

"Discovery Day encourages people to delve into the world around them," says Dr. John Harris, one of the participating curators. "We've identified fossil teeth, bones, shells, crystals, rocks, and exotic items found on vacation or unearthed in a back yard. Once we even had a fossil whale skull rolled in on a wheelbarrow! This is an exciting event for curators as well as visitors."

A host of family activities are planned for the day. Children can make saber-toothed cat masks and enjoy other craft projects. Rarely seen objects from the Page Museum's collections will be on display, and paleontologists will demonstrate how tiny fossils are extracted from the asphalt and then used to interpret what the climate of Los Angeles was like at the end of the last Ice Age.

Participation in Discovery Day is free with museum admission, which is always free to museum members. For further information, please call 323/934-PAGE.

■ TRAVEL OUT OF THE ORDINARY!

The Natural History Museum has a wonderful array of trips scheduled for 1999, including a number of "Curator's Choices," journeys led by museum scholars and planned to ensure extraordinary adventures on each day's itinerary. Join us for:

- Nature and history amidst the Pyrenees, from Barcelona to Bilbao with paleontologist Ken Campbell, April 22 to May 7, $4,325 plus airfare
- Mount St. Helens revisited—into the mouth of the volcano with geologist Dave Whistler, June 26 to July 2, $1,250 including airfare
- The incomparable Hudson Bay, a cruise in the Northwest Territories aboard the brand new 90-passenger luxury vessel, *Le Levant,* August 24 to September 5, from $4,995 to $6,895 plus airfare.
- Inca and pre-Inca ruins of Peru and Bolivia—new pre-Columbian discoveries and relics of colonial history with archaeologist Karen Wise, September 18 to October 3, $4,590 plus airfare.

To obtain more information about these travel opportunities or to receive a list of the museum's destinations for 1999 and 2000, please call Christine Robison, your museum travel coordinator, at 213/763-3350.

■ A GREAT DINOSAUR STORE!

The Great Russian Dinosaurs, an exhibition of skeletons of dinosaurs and other extinct reptiles from Eurasia, is on view through May 2 in the Exposition Park museum. And the Gallery Store is stocked with wonderful gifts and educational materials for the duration. The store features a wide array of books, videos, and CD-ROMs on prehistoric life as well as posters, stationery, T-shirts, toys, and jewelry with a dinosaur theme.

The store, which is opposite the opening to the Dart Gallery on the museum's ground floor, is open during museum hours and can be reached at 213/748-8024.

Cover: Elf Owl *(Micrathene whitneyi).* Watercolor, William D. Berry, circa 1950.

The paintings of southern California birds and mammals in this issue of Terra are by William D. Berry, who provided 60 illustrations for the museum's 1950s' editions of pamphlets on local wildlife. The original paintings are in the collections of the Museum Library.

Annual Report, 1997–1998
Natural History Museum of Los Angeles County

PRESIDENTS' MESSAGES

THE PREPARATION OF AN ANNUAL REPORT forces an institution to assess its progress and accomplishments for the year. To its credit, the Natural History Museum has recently been engaged in the process of assessment year round. Advanced planning has been the hallmark of the current administration, and this has required looking unflinchingly at the museum's weaknesses as well as its strengths and then setting priorities and monitoring progress at making improvements. The overall goal has been to increase the institution's effectiveness at presenting its messages to visitors and members and others who use its resources.

As this annual report shows, the museum's support base—a major indication of its value to the community it serves—is both broad and deep. Museum membership is currently at a little over 15,000 households, more than 13 percent above what it was at this time last year. In the report period, friends of the museum have come forward with financial gifts ranging into the six figures, and the precious gift of time has again been generously bestowed upon the institution by its scores of loyal and dependable docents and volunteers. No nonprofit organization can operate today without financial and volunteer assistance, and we are indeed fortunate to have both in such abundance.

I especially want to thank the two groups with whom I deal most often and most directly—the Board of Trustees and the senior staff. The trustees have shown a commendable loyalty to the museum, as a group for more than 85 years, and in some individual cases for almost half of that time. Just last year, sadly, we lost one of our longest-serving trustees, Dr. M. Norvel Young, chancellor emeritus of Pepperdine University, who joined the trustees in 1960 and demonstrated great dedication to the museum's well-being over the next 38 years. It is gratifying to me to see how the commitment of newer trustees deepens over time, allowing them to become worthy successors to such stalwarts as Norvel Young.

The staff of the museum, under Jim Powell's leadership, continues to operate the institution in a most professional manner. As revealed in Jim's essay later in this report, however, the challenge that the museum now faces is in my opinion greater than any since its founding—nothing less than to build a new, defining, twenty-first century museum of natural history from the ground up.

To turn this dream into a reality will take hard work on the part of the staff, further dedication from the museum's governing bodies and other friends, and strong commitment from the County of Los Angeles and its Board of Supervisors. But if we are prepared to seize the opportunity that we have, I am confident that we can succeed. That is the task to which I intend to dedicate myself and the trustees over the next few years. As we move forward on this exciting venture, we will continue to rely on the enthusiasm and good will of the museum's members and friends.

KEVIN W. SHARER
President, Board of Trustees
Natural History Museum of
Los Angeles County

COVER: A grove of California fan palms in a desert canyon near Palm Springs, California.

California's diverse regions and habitats are home to more endemic species of plants and animals than any other area of the same size in North America. The state also leads those in the continental United States in having the highest number of organisms that are threatened or endangered.

Although the Natural History Museum's collections are now global in scope, the institution was founded in part to promote understanding of local natural history, and California wildlife has remained a focus of our collecting and research efforts.

Dr. James L. Powell *(standing at right)*, president and director of the Natural History Museum, with Mr. and Mrs. Samuel Oschin *(seated)* and Vincent K. Beggs, the museum's vice-president of development, near the elephant diorama in the museum's African mammal hall. The hall has been named for the Oschin family, in recognition of their generous support of the museum and commitment to its programs.

The Mr. and Mrs. Samuel Oschin and Family Hall of African Mammals is one of the museum's oldest and most popular galleries, with seventeen exquisitely detailed and beautiful habitat recreations featuring twenty large mammal species as well as a termite mound, a brooding ostrich, and many other birds, reptiles, and insects. During the annual report period, installation of a hippopotamus family setting in the hall was completed, and the museum designed and began testing a series of labels and panels designed to use the dioramas to underscore basic principles of biology.

A GOAL FOR THE NATURAL HISTORY MUSEUM that was expressed in the earliest strategic plans developed after I came to the museum in 1994 is to provide outstanding exhibits, programs, and service to a growing audience. As work proceeded in the years following the adoption of that plan by the Board of Trustees, we have focused attention on reorganizing and revitalizing our exhibitions, which not only highlight our superb collections but provide the springboard for all of the institution's special events and educational offerings. As I explain in my essay in the center of this report, this year's assessment activities have brought us a profound challenge: we find that we have the need—and the opportunity—to reinvent the institution, to start from scratch and build a new natural history museum.

Over the current report year, as investigations made this course appear more and more inevitable, staff have responded to the challenge and begun to work in teams to develop outlines of the concepts to be emphasized in the new museum. Every laboratory, classroom, and collection and exhibition space must be reenvisioned and reinvented to address the most important principles of modern science and the humanities.

We are now working intensely to elucidate the themes for the new museum. Curatorial staff members, the keepers of the collections, have been working with educators and designers—our interpreters—to imagine the most relevant and exciting ways to incorporate specimens and artifacts in new displays. The alarming global loss of biological diversity will be at the heart of use of our natural history specimens: it is a primary concern for our staff and members, and we believe that our exhibitions can both celebrate biodiversity and be a focal point for efforts to preserve it locally and internationally.

IN THE PAST YEAR, WE HAVE LOST TWO important members of our museum family. President Sharer mentioned the death of long-time trustee M. Norvel Young in his opening remarks. It was inspirational for me to attend Norvel's memorial service and to learn of his great accomplishments in

reinvigorating Pepperdine University. Norvel was truly a larger-than-life figure; we at the museum feel privileged to have known him.

The second loss, in December 1998, was of my immediate predecessor, Craig C. Black, who served as director of the museum from September 1982 until June 1994. Having been director of the Carnegie Museum in Pittsburgh and president of the American Association of Museums, Craig arrived in Los Angeles with the background and the skills needed to bring a great deal of professionalism to our institution. He helped to put the museum on the map not only nationally but internationally, and he saw it through a time of trouble when the budget from Los Angeles County was significantly reduced. In his last year, working with the Board of Trustees, he laid the groundwork that resulted in passage of an agreement that guarantees us stable funding from the county until 2019. Ironically, the measure was adopted only 12 days after Craig left office.

Individuals like M. Norvel Young and Craig C. Black come along but seldom; this institution has been blessed to have the service of both. We will forever be in their debt.

Several important staffing changes have taken place within the year. In the preceding issue of TERRA, the retirement of long-time curator Bob Lavenberg was noted (his tenure overlapped substantially with that of Norvel Young). We were most fortunate that Bob could cap his 35-year career by serving as our deputy director for research and collections. A national search for Bob's replacement is underway; meanwhile, John Heyning, curator of mammals, is filling in admirably as acting deputy.

Vahe Simonian joined us as senior vice-president for development in February 1998, having left the identical post at the California Science Center and moved the short 100 yards to our museum. We are very fortunate to have Vahe, who is the most senior and distinguished member of the fund-raising community in Los Angeles, on our team. We found our new chief of education, Linda Abraham, even nearer to home; as most readers of TERRA will know, Linda has worked in the museum since 1992, most recently in the position of assistant chief of education. I was delighted that after a national search we found in Linda the best person to lead the Education Division. I am also pleased to report the appointments of Pat Caspary as director of stores and Curt Abdouch as administrator of the Page Museum.

The past fiscal year was a banner one for exhibits. The outstanding exhibit, *Cats! Wild to Mild,* which we built, exhibited in our Dart Gallery, and then sent off on national tour, was followed by the very well attended *Africa: One Continent, Many Worlds;* in the spring, we hosted an appearance of the robotic Kokoro Dinosaurs. Perhaps the most outstanding achievement in exhibitions for the report period was the installation of *The Duel in Bronze* at the museum's north entrance on Exposition Boulevard. A fleshed-out restoration of our Foyer's Tamkin Dueling Dinosaurs, the new 40-foot-long bronze sculpture of *Tyrannosaurus* and *Triceratops* in battle was also named for Dr. S. Jerome and Judith D. Tamkin in honor of their support of the museum.

Staff have been actively participating in master planning. Of course, the reason we have the option of undertaking master planning is that we have our house in order: budgets are balanced, endowment has grown sharply, key staff appointments have been made, and deferred maintenance has been largely corrected. Exposition Park is thriving; Hancock Park will soon do likewise when it emerges from the major renovation project that the Los Angeles County Museum of Art and the Natural History Museum are conducting there.

I thank all of the members of the museum family for your support. We will continue to do our best to live up to the trust that you have placed in the museum.

James L. Powell
President and Director
Natural History Museum of
Los Angeles County

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As of February 1, 1999

OVERVIEW

The Natural History Museum exists to advance knowledge and to enable people of all ages, backgrounds, and interests to understand and appreciate their natural and cultural heritage. The museum assembles, conserves, interprets, and holds in trust collections of irreplaceable objects from nature and human history. These collections reveal the history of the earth and the evolution and diversity of life and culture. They sustain programs of research, exhibits, education, and publication. Mission statement, Natural History Museum of Los Angeles County

About the illustrations: For the cover and central illustrations in this report, we have chosen four very specific scenes, each representing a general area where a number of the museum's scientists collect and study organisms and their habitats. With each of the following landscapes, we include just a few of the species from that type of environment that are receiving attention from our curators and scientific associates, along with brief statements about the puzzles that each organism poses.

The scientists are working with great urgency, attempting to find and observe organisms, inventory and preserve samples, and unravel the evolutionary relationships among species; they hope to provide insights that will prevent many from disappearing forever. The photographs offer a glimpse at the diversity that must continue to be a feature of our world and that will be explored and celebrated in the new museum that we are working to create.

Four Museums

Thirty-three million specimens and artifacts spanning 3.5 billion years of earth's history form the basis for the Natural History Museum's programs of research and interpretation. Since it opened to the public in 1913, the museum has grown to encompass four major cultural attractions, each with permanent and changing exhibitions, as well as a number of important scholarly and educational operations.

The **Museum of Natural History, Exposition Park,** is the third largest natural and cultural history museum in the United States. Its 150,000 square feet of public galleries—which include halls devoted to gems and minerals, living and extinct mammals, dinosaurs, birds, Native American and pre-Columbian cultures, and U.S. and Southwest history—attract 370,000 visitors annually. Its architecturally distinguished building also houses the administration for the entire Natural History Museum organization as well as most of the institution's collections and research laboratories.

The **George C. Page Museum at the La Brea Tar Pits** in Hancock Park is located at the site of one of the world's richest deposits of Ice Age fossils. Its galleries, laboratories, and storerooms house the Rancho La Brea heritage—more than 3 million fossil plants and animals that have been excavated from the La Brea Tar Pits since the early 1900s. This vast collection, which is the basis for the museum's colorful displays of extinct creatures and prehistoric landscapes, gives an incredibly detailed picture of life in North America from 4,000 to 40,000 years ago. The Page Museum hosts 250,000 visitors each year.

The **Petersen Automotive Museum**, one of the most carefully researched and vividly rendered museums of its kind, chronicles the influence of the car on all aspects of life in southern California in the twentieth century. Through its "streetscape" of dioramas and its special exhibitions of rare and classic passenger vehicles, trucks, and motorcycles, the museum dramatically illustrates technological and design innovation as well as auto-related highlights from Los Angeles history. Attendance in 1997-1998, the Petersen Museum's fourth full year of operation, was 125,000.

The Spanish colonial style mansion that houses the **William S. Hart Museum,** in Hart Park in the City of Newhall, was once the home of the silent screen star, director, and scriptwriter famed for his portrayals of Western heroes. Mr. Hart's personal effects and movie paraphernalia are displayed in the museum's rooms along with treasures from his collection of Native American and Western American art. Each year, more than 170,000 people visit Hart Park and Museum.

The Research and Collections Programs

The Natural History Museum's programs of research and collections center on objects and specimens relating to nineteen disciplines. The various collections range in size from the relatively small but unique holdings at the Hart and Petersen Museums to those in, for example, invertebrate zoology and paleontology, which are of worldwide significance in their size and scope. The collections are maintained by a staff of 61 specialists, including 19 curators—each with responsibilities for research, collection growth, and interpretation.

The **History Program** is based on two collections dealing with United States history. The material culture collection of more than 500,000 objects, one of the largest of its kind, is unique in its diversity of artifacts from the American past as well as its focus on California and Southwest history; the collection documents and supports exhibitions in several major halls in the Exposition Park building. The Seaver Center for Western History Research, a library of manuscripts, books, maps, photographs, and other exhibit and research materials, includes more than 1 million records relating to California and the American West; it is an important resource

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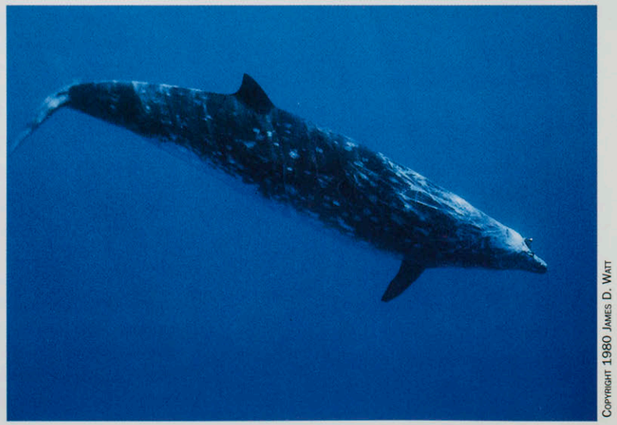
Kimball L. Garrett

Ofu *(above),* an extinct volcanic island in the Samoan Archipelago in the South Pacific. A section of the island's fringing reef and beach of coral sand is part of the National Park of American Samoa.

Fish and other marine organisms congregate around reefs, such as the one off Fiji *(far right),* delighting divers and photographers who go underwater there. But harvest of the world's reef resources—invertebrates as well as fishes—also supports millions of people. In this century, an estimated one-tenth of the planet's coral reefs have been destroyed, directly or indirectly, by people and the effects of their activities; nearly all of these important marine habitats may disappear in the next 100 years.

When biologists realized that it is not only the sheer numbers but the variety of organisms present in a reef or other environment that gives indication of its health, the task of identifying and naming and classifying species was recognized as critical to ecological assessment. This work—the study of natural history including taxonomy, systematics, and evolution—is the provenance of museum scientists and a cornerstone for all biological investigations.



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Left: **A male Blainville's beaked whale in waters off Hawaii. The 14-foot-long animal sports nicely developed tusks; the scars along its body attest to its encounters with other similarly equipped males. Research by John E. Heyning, curator of mammals, and James G. Mead has shown that beaked whales feed by vacuuming up squid using their narrow snouts and a piston action of the tongue.**

Incredibly, discoveries of new species of large mammals can occur even locally. In the mid-1970s, four rare beaked whales stranded in southern California and one was added to the museum's collections. The cetaceans were originally thought to be Hector's beaked whales that had strayed from the Southern Hemisphere where that species is normally found. But recent genetic analyses have shown that these individuals instead represent a new species entirely. Using specimens from our museum's collections, Merel Dalbout, a graduate student of Dr. Heyning's from New Zealand, is unraveling this mystery.

Top: **A feather star, or comatulid crinoid, photographed in the shallow waters of American Samoa but not yet collected there or identified. In certain respects we know less about the 700 species of living crinoids than about the 6,000 fossil species, some as old as the Cambrian Burgess Shale, that have been recognized.**

Working with Gordon Hendler, curator of echinoderms, Larry Madrigal, a high school teacher from the islands, has prepared a guide to marine invertebrates there. In the course of the collaboration, the museum has acquired specimens for its collections, which now include what may be the world's most comprehensive series of echinoderms from these waters. Many of the species found were not known to occur off Samoa, and a number are new to science. Dr. Hendler has been invited to participate in a National Geographic program, the Sustainable Seas Expedition, in which manned submersibles and scuba will be used to explore all of the twelve U.S. national marine sanctuaries, including Fagatele Bay at Tutuila, American Samoa.

Above: **A juvenile White Tern *(Gygis alba)* stretches in its nest on Christmas Island in the central Pacific.**

Terns and other seabirds play an enormously important role in the dynamics of the ecosystems of oceanic islands and the waters that surround them; the vast flocks that comb the ocean's surface must retreat to protected islands to breed. The Natural History Museum's extensive holdings of seabird specimens from the central and north Pacific are frequently used by scientists trying to sort out the variation in seabird populations occupying different island groups. Our collections and research have proved particularly important in gauging the global effects of El Niño episodes.

for scholars as well as film makers and others involved in documentary and educational projects.

The scholars of the history program specialize in California history, particularly politics and the impact of the state on the rest of the nation.

The **William S. Hart Collection** includes the furnishings of his home, an important collection of weapons, Western American and Native American art, and documents and photographs relating to his stage, film, and ranching careers. Hart's papers form an important reference collection in the Exposition Park museum's Seaver Center; his personal effects and many of his art treasures remain in place in his home and its outbuildings in Hart Park, where they can be enjoyed by the public.

The **Transportation Collection** includes more than 150 cars, trucks, and motorcycles built between 1897 and the present as well as a number of artifacts related to the history of road travel in the United States and a large collection of books, journals, and photographs on the history of the automobile. The collection supports the exhibits and programs at the Petersen Automotive Museum; the historians who care for the collection are experts in the maintenance and conservation of antique vehicles.

Two collections are at the core of the **Anthropology Program.** The archaeology collection consists of about 150,000 objects from sites of human occupation around the Western Hemisphere and represents cultures tracing back as far as the Paleo-Indian Period 12,000 years ago; its materials from Mexico and Central and South America inform a major hall on pre-Columbian cultures in the Exposition Park museum. The ethnology collection of about 34,000 artifacts produced by the native peoples of the New World, Oceania, Africa, and Asia is a particularly important resource on Native American cultures; both ancient and contemporary examples of the work of North American peoples are displayed in the Exposition Park museum's Times Mirror Hall of Native American Cultures.

Staff experts associated with the program include an ethnographer specializing in contemporary and traditional Zuni ceramics and an archaeologist studying the origins of human civilizations in Peru.

The **Mineral Sciences Program** is centered on a collection of nearly 50,000 minerals, rocks, meteorites, and gems that, although worldwide in scope, is particularly strong in materials from California and in native gold, gem crystals, and colored gems. The collection ranks as the most important of its kind in the western United States. Significant specimens are on display in the Exposition Park museum's Hall of Gems and Minerals. The curator's research focuses on new or inadequately characterized minerals.

The museum's **Invertebrate Zoology Program** encompasses six extensive collections, including:

- Four million specimens of polychaete worms, the third largest collection in the world. Because marine worms are important indicators of the health of their sediment and seawater habitats, the museum's polychaetes are in wide use and are critical to national and international environmental assessments. The curator studies polychaete evolution, and the collection manager is an authority on West Coast polychaetes.
- Five million crustacean specimens, a collection that ranks second in size in the nation only to the holdings of the Smithsonian Institution. Included is a particularly wide array of shrimps, lobsters, crabs, and related aquatic arthropods from the eastern Pacific Ocean. The curator specializes in freshwater branchiopods and deep-sea hydrothermal vent shrimps and crabs.
- A malacology collection that includes 4 million specimens and is the largest of its kind in the western United States. The collection is particularly rich in mollusks from the eastern Pacific and includes an important section of microscopic fauna. The curator is a specialist in deep-sea mollusks, in particular, hydrothermal vent limpets.
- An echinoderm collection that is worldwide in scope and unparalleled in its wealth of specimens from the eastern and western Pacific; the fauna of the Caribbean is also particularly well represented among the total of 600,000 specimens of brittle stars, sea urchins, sea cucumbers, and related marine organisms. The curator is an expert on sea stars and allied animals.
- An entomology collection with 5.3 million specimens of insects, spiders, and related arthropods from throughout the world. It is particularly rich in materials from the southwestern United States and the American tropics and includes one of the nation's best collections of ants, bees, and wasps as well as a major assemblage of butterflies and moths. The curator's research focuses on the phorids—tiny "ant-decapitating" flies.
- More than 3.5 million specimens of fossil invertebrates documenting more than 600 million years of earth history. The sixth largest collection of its kind on the North American continent, it includes representatives of every major invertebrate group known from the fossil records as well as species from all continents and geological time periods.

At the heart of the **Vertebrate Zoology Program** are rich and diverse collections representing living and extinct animals of the world, including:

- A vertebrate paleontology collection that focuses on Cenozoic specimens from western North America but also contains a small yet significant selection of dinosaurs. With more than 500,000 specimens, the collection is one of the largest in the world and includes some of the oldest recognized vertebrates as well as the remains of animals that became extinct less than 10,000 years ago. Among the staff are experts in fossil mammals of East Africa; fossil vertebrates of Amazonia; fossil marine reptiles and fishes of North America; small fossil reptiles and mammals of California; and fossil marine mammals of the Pacific Rim.

The Rancho La Brea collection center includes a further 3 million fossil plants, invertebrates, and vertebrates retrieved from

the asphalt deposits in and around Hancock Park over the last century; these materials make up the world's largest collection of terrestrial fossils from the late Pleistocene and support the exhibits and educational programs of the Page Museum at the La Brea Tar Pits.

■ The Robert J. Lavenberg Collection of Fishes, which with 7 million specimens is one of the largest and most comprehensive in the United States. Included are major holdings of marine fishes from the Pacific, Antarctic, and New World Tropics. The collection, which is distinguished by its diversity of specimen types, features not only preserved adults but also juveniles, larvae and eggs, otoliths, and skeletons. Scientists working with this material include specialists in larval fishes, dwarf sharks, cutlassfishes, basses, and flatfishes; the curator studies the ontogeny and evolution of diminutive reef fishes known as gobies.

■ A collection of approximately 180,000 specimens of amphibians and reptiles, which is one of the top ten in the United States in size and significance. The coverage is global but is particularly strong for the southwestern U.S., Mexico, Costa Rica, Ecuador, Peru, and Africa. In addition to specimens preserved in alcohol, there are significant ancillary holdings of skeletons, chromosome preparations, and frozen tissue samples for DNA analyses. The curator studies a family of Central and South American lizards that includes aquatic, arboreal, burrowing, high-elevation, nearly limbless, and unisexual species.

■ A birds collection, which with its 110,000 specimens, is the second largest in western North America; material from 80 percent of the world's genera, and 60 percent of the world's species, is included. It is particularly rich in birds from South America and Africa, and its holdings from parts of Uganda and Kenya represent areas that are now completely deforested. The collection, which is maintained by a curator of fossils birds and an expert in the field identification of birds of North America, supports one of the Exposition Park museum's permanent exhibitions, the Ralph W. Schreiber Hall of Birds.

■ A mammals collection of 95,000 specimens that contains representatives of all of the orders and families of the world and includes the world's second largest assemblage of marine species as well as extensive holdings of bats and a large series of African and Central American mammals. The curator is an expert in the evolution and natural history of cetaceans.

■ The **Library Services Program** administers a collection of printed materials and ephemera, including almost 120,000 books and a greater number of periodical volumes on natural history, history, and anthropology, the largest collection of its kind in California. The collection is particularly rich in material on Los Angeles and Southwestern history, including early judicial and electoral records. The librarians are specialists not only in library organization and management but also in computer literature searching and rare book bibliography.

Programs of Public Outreach

The Education and Exhibition Divisions work at all four facilities in the Natural History Museum complex to build bridges between the research collections and the owners of these collections—the public. The museum's professional educators and designers serve as interpreters, planning exhibits that use the collections and the expertise of our staff scholars to provide enjoyable learning experiences for visitors. Our public programs are the vehicle for curatorial contact with members, visitors, and students.

The education staff also develops and implements supplemental and enriching events and courses—such as school tours, workshops and classes, lectures and symposia, outreach programs, and publications—that provide in-depth information about nature and culture. These offerings reached more than 675,000 individuals during the year: nearly 200,000 school children visited the four museums with their classes, while another 200,000 people were served by the outreach and artifact loan services.

HIGHLIGHTS OF THE YEAR

Celebration of Africa. More than 400 educators toured *Africa: One Continent, Many Worlds,* and joined the exhibition's curator, Dr. Deborah L. Mack, for an evening of workshops, lectures, and activities designed to help teachers integrate the study of Africa and African cultures into their classroom curriculums. Participation of the African American Cultural Center and the California African American Museum helped to distinguish the event as one of the museum's most successful teachers' workshops to date.

An ancillary show highlighting materials from the museum's own African collections was curated by members of the Los Angeles community. The museum also mounted *Spectrums,* an exhibition of the paintings of artist Synthia Saint James, as well as *Tengo Casi 500 Años: Africa's Legacy in Mexico, Central and South America,* featuring the photographs of Tony Gleaton.

All of the Africa exhibitions were explored in a major new section of the museum's page on the World Wide Web designed and installed by the Information Technology office in cooperation with the Field Museum of Natural History in Chicago, Dr. Mack and Mr. Gleaton, and the California African American Museum, the Armory Center for the Arts, the Bowers Museum of Cultural Art, the California African-American Genealogical Society, Dr. Maulana Karenga, Synthia Saint James, and Nailah Malik.

Educational activities for children and families were hosted throughout the run of the Africa exhibits. Funding for the educators' evening and free family workshops was provided by Ford Motor Company. Local sponsors included the Los Angeles County Metropolitan Transportation Authority, Ralphs/Food 4 Less Foundation, Target Stores, WAVE Community Newspapers, KACE Radio, Hyatt Hotels, and America West Airlines

Traveling classrooms. The museum's Earthmobile and Seamobile, outreach programs funded by the Maxwell H. Gluck Foundation, are available free to students in the Los Angeles Unified School District. The Earthmobile, for grades 3 through 5, introduces students to local Native American cultures through a simulated archaeological excavation; in the Seamobile, geared toward middle school students, kids investigate our coastal habitats on a "dive" in a research submersible.

This year, the large tractor trailers continued to travel to different schools each week, serving approximately 18,000 elementary school students and 10,000 middle school children. The Gluck Foundation recently renewed grants for both programs, providing $1.2 million for programming through September 2000.

A Day of Sunshine. This year, the Natural History Museum again brought more than 150 children who are disadvantaged or have special needs to the Page Museum for a day of activities. Since its inception in 1991, *A Day of Sunshine* has reached more than 800 children, providing educational experiences and fun beyond the realms of their daily lives in missions, shelters, and low-income housing projects. The program serves children from such diverse organizations as Esperanza Community Housing, Good Shepherd Shelter, and Pathways Domestic Violence Shelter.

The museum is grateful to the friends and family of Alliance Board member Bob Lane; their generous gifts to the Robert G. Lane Memorial Fund will provide financial support for *A Day of Sunshine* for the next 10 years.

May Family Discovery Center. The Discovery Center at the Petersen Automotive Museum, generously funded by the Wilbur May Foundation, opened its doors in November 1997. Through interactive exhibitry, hands-on experiences, and workshops, visitors to the center can learn basic scientific principles via the automobile. Younger visitors can check out educational games and puzzles housed in an authentic Sparkletts Water truck; and anxious-to-drive teenagers can test their skills on the center's real-time computerized driving simulator. In its first few months of operation, the Discovery Center attracted more than 1,600 school children.

Charles L. Hogue Memorial Exhibition. The Insect Zoo unveiled a tribute to the late Dr. Hogue, honoring his long career as curator of entomology and his contributions to the development and design of the zoo and to the museum in general. The memorial, which was funded by the Docent Roundtable, and an overall facelift of the Insect Zoo were completed in time for the Twelfth Annual Insect Fair, held at the museum in June 1998. The Insect Fair was sponsored by Lincoln Mercury and Schlessinger Media; more than 7,000 people attended the weekend event.

Environmental education symposium. The Natural History Museum was one of three museums chosen to participate in the first U.S./Japan symposium on environmental learning, which was held in Ibaraki in June. Hosted by the Ibaraki Nature Museum, the gathering of science and natural history educators focused on ways that museums can lead cooperative efforts with schools and communities to promote awareness of global environmental issues; the development of a philosophy of environmental education was another aim of the project.

Exposition Park museum remodel. Working in teams, the museum's educators, scholars, and exhibit designers refurbished and changed a number of aspects of the Exposition Park museum's permanent halls and galleries during the year, adding new exhibit elements and informational panels. In addition, a remodel of the cafeteria and of the ground floor entrance to the building, where guests with strollers and wheelchairs enter, was initiated. The welcoming new entrance was completed in April 1998, and the Curator's Cafe opened 7 months later, with a completely new decor and menu by Patina.

Hart of the West exhibition. In late September, more than 450 people viewed a special exhibit of Native American beadwork from the William S. Hart collection. The extensive array of purses, dresses, leggings, head and arm bands, and other garments included costumes fashioned for

Mr. Hart's silent films as well as authentic regalia dating back to 1850 that he had amassed. Items from the collection will now be exhibited each year during the Hart of the West festivities.

Hearst Foundation endowment. The William Randolph Hearst Foundation contributed $200,000 to the Hearst Education Endowment, which provides annual support for the museum's educational initiatives designed to complement and strengthen elementary and secondary education and social studies curricula. The endowment helps to sustain numerous programs, including docent training, school tours, workshops for educators, and special programs for senior citizens, disabled children, and at-risk youth.

New books by museum scholars. The research staff of the museum continued to make results of studies available, both in general interest publications as well as scholarly journals. Three books were published during the year. *The Fishes of the Galapagos Islands,* by Jack Stein Grove and Robert J. Lavenberg, was released by Stanford University Press; Dr. Lavenberg, who retired at the end of 1998, was deputy director for research and collections at the time of the book's publication.

A Field Guide to Warblers of North America, which was published by Houghton Mifflin in 1997, is the latest volume in the Peterson Field Guide series and the result of many years of work by field ornithologist Jon L. Dunn and the museum's ornithology collections manager Kimball L. Garrett.

Night Comes to the Cretaceous: Dinosaur Extinction and the Transformation of Modern Geology, by James L. Powell, is an account of the intense controversy and research occasioned over the last two decades by the theory that an asteroid or comet impact was responsible for the demise of the dinosaurs; the book was published by W.H. Freeman and Company in 1998.

Complete listings of staff and museum publications during the year appear in the annual report section of the museum's World Wide Web page (www.nhm.org/annual_report).

Grant for vertebrate collections care. The National Science Foundation awarded a grant of $200,000 to computerize the museum's collections of both fishes and amphibians and reptiles. When entry of data on the more than 7 million specimens is complete in the coming fall, researchers from around the world will be able to access our holdings through the Internet.

Parsons Discovery Center. The Ralph M. Parsons Foundation continued its support of the very popular Discovery Center in the Exposition Park museum through a generous grant of $192,500, to provide the center with funds for hiring and training staff members, for installing new exhibit components and new curriculum materials for visiting school groups, and for ongoing family programming. The grant is being used to develop illustrated materials to prepare young school children and their teachers for a visit to the center as well as curriculum guides for teachers of older children. An audio corner where visitors can listen to recordings of legends and tales as well as animal sounds is in design, and the center's x-ray vision corner is being refurbished with new skeletons, x-rays, and collection items.

Museums' park settings improved. A new community park near the Museum of Natural History was completed and dedicated during the year. Museum educators helped to design it, to allow for enjoyment by our visitors and neighbors. In addition, the median that runs the length of Exposition Boulevard between the museum and the University of Southern California has been fully landscaped, providing a beautiful entry into the park.

Renovations at Hancock Park, the site of the Page Museum, will be completed in spring of this year. When reopened, the park will feature new pathways, lighting, and signage, making the tar pits and other features of this important national natural landmark more accessible, educational, and beautiful.

Talented volunteers. A dedicated corps of volunteers continued to play an essential role in all phases of operations at the four museums, providing school tours and assistance with outreach, membership recruitment, special events, and curatorial work. Their support was critical to maintaining the institution's outstanding programs and to building new ones for our growing audience. During the year, volunteers contributed 86,200 hours of service.

We recognize and thank the members of the Docent Roundtable, the Museum Service Council, the Petersen Museum Pit Crew, and the Page Museum Docent Associates as well as the curatorial volunteers, the Page Museum Laboratory volunteers, and the volunteer committee of the Friends of Hart Park and Museum. A complete list of our 490 volunteers appears in the annual report section of the museum's page on the World Wide Web (www.nhm.org/annual_report).

DAVID KIZIRIAN

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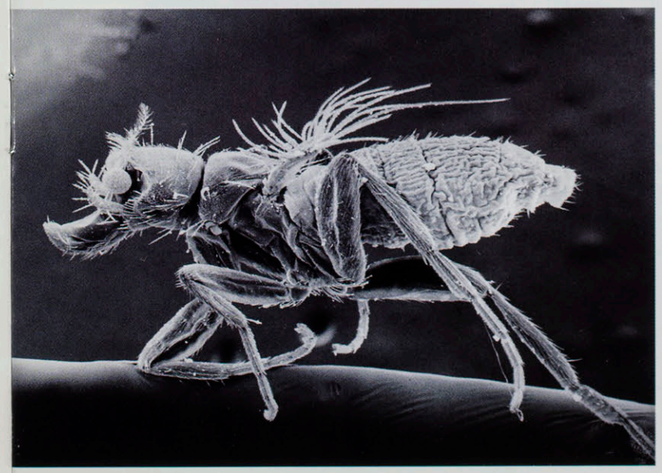

BRIAN V. BROWN

Bromeliads flowering in El Yunque cloud forest of Puerto Rico *(above).*

The uppermost reaches of cloud and rain forests are an interface between earth's atmosphere and its biosphere. The intensity of solar heat and light in the forest canopy leads to a high rate of photosynthesis; the result is a massive outpouring of oxygen and a vital recycling of life's basic elements. It is estimated that the majority of the world's species—undescribed arthropods such as mites, spiders, and insects—live in the canopies, making the tropical forests the planet's greatest reservoir of undocumented life forms.

A number of the museum's scientists collect and study tropical organisms. Roy R. Snelling, emeritus staff specialist in ants, bees, and wasps, and several other curatorial staff members have participated in programs designed to give a quick overview of the species and populations in a given area so that more accurate estimates of local biodiversity can be made. Mr. Snelling has recently returned from one of these "rapid assessment" expeditions to New Guinea.

Top: **This cryptically colored frog, a nocturnal leaf-litter species of the family Pelobatidae, was collected in the Annamite Mountains in northern Vietnam.**

David Kizirian, assistant curator of herpetology, is participating in a biological inventory of the Annamite Mountains—which is relatively unexplored territory for biologists—in collaboration with scientists from the American Museum of Natural History in New York and the Institute of Ecology and Biological Resources in Hanoi. This spring, the team will conduct elevational surveys of the Vu Quang Nature Reserve in the Annamites, where a number of new species—including a new bovid and the world's largest muntjac or barking deer—have been discovered in recent years. In addition to inventorying reptiles and amphibians found in the reserve, Dr. Kizirian is collaborating with a Vietnamese student on the descriptions of new species of frogs and lizards and is working to help the Vietnamese modernize their research collections.

Right: **A scanning electron micrograph of a female phorid of the genus *Acontistoptera;* the Costa Rican fly is approximately six hundredths of an inch long.**

Species of *Acontistoptera* and a tiny galaxy of animals such as birds, mites, butterflies, beetles, and other flies live in association with army ants and are absolutely dependant on the presence of the ants for food, shelter, or a combination of the two. Work by Brian V. Brown, associate curator of entomology, has shown that the relationships and interactions among the ants and their associates are more complex than previously imagined. Exploitation of specialized niches, like those found in colonies of army ants, is one source of the incredible diversity of tropical forest ecosystems.

Above: **The White-plumed Antbird *Pithys albifrons,* a species in the large group of suboscines, which includes the antbirds, ovenbirds, woodcreepers, and tyrant flycatchers.**

The Natural History Museum houses several thousand bird specimens from the forests and savannas of the Amazon basin in Brazil, all classified according to traditional methods—on the basis of their body structures. But modern avian systematists have additional tools in their arsenal of identification approaches, including analyses of genetic material as well as vocalizations and other behavioral characteristics. These techniques are being applied in studies of the suboscines; by superimposing information about the songs of these birds onto data yielded by study skins in the museum's collections, research associate Kevin J. Zimmer is discovering previously unrecognized species. His results and those of other workers are significantly increasing the number of species known from the Amazon basin, revealing that the biodiversity of South American birds is even greater than previously realized.

Special Exhibitions

July 1, 1997, through June 30, 1998

Museum of Natural History, Exposition Park

Cats! Wild to Mild. Dart Gallery, to September 1997

Africa: One Continent, Many Worlds. Dart Gallery, October 1997 to January 1998

Dinosaurs! Dart Gallery, January to May 1998

Microbes: Invisible Invaders, Amazing Allies. Dart Gallery, opened May 1998

The Unprecedented Tiger Paintings of Andy Lee. Ground floor hallways, to September 1997

Prehistoric Images by Josef Moravec. Ground floor hallways, January to May 1998

Stones from Heaven: Ancient Chinese Jade. First floor gallery, opened April 1998

Spectrums: The Art of Synthia Saint James. Rotunda, August 1997 through April 1998

Treasures of the Sierra Nevada by Artists of the California Art Club. Rotunda, opened May 1998

Museum Treasures. Director's Gallery, continuing

Tengo Casi 500 Años: Africa's Legacy in Mexico, Central and South America: Photographs by Tony Gleaton. Second floor gallery, August to December 1997

The Community's Choice: Selections from the African Collections. Second floor gallery, opened August 1997

Petersen Automotive Museum

Harley Legends. Third floor galleries, to September 1997

Wood on Wheels: Photographs by Gayle Fann. Third floor galleries, to September 1997

Children's Car Art. Third floor galleries, to September 1997

American Muscle Cars. State-of-the-Art Gallery, opened January 1998

Ferrari at 50. Grand Salon, to November 1997

Photography of Tom Burnside. Second floor galleries, to November 1997

Photographs from the Collection of Ferrari North America. Second floor galleries, to November 1997

Paintings by Tom Schulz. Third floor galleries, to September 1997

Detroit Dream Cars, Featuring the Bortz Collection. Grand Salon, November 1997 through May 1998

It's a Duesy! Powerful Cars for Powerful People. Grand Salon, opened June 1998

Fifty Years of Land Rover. Second floor galleries, opened May 1998

Traveling Exhibitions

California Reptiles and Amphibians
California Academy of Sciences, San Francisco, California, to September 1997

Cats! Wild to Mild
San Diego Natural History Museum, San Diego, California, November 1997 to January 1998

Lawrence Hall of Science, University of California, Berkeley, February to May 1998

Explorers Hall, National Geographic Society, Washington, D.C., opened June 1998

Hawaii's Unique and Vanishing Flora
Pacific Grove Museum of Natural History, Pacific Grove, California, September through October 1997

Genghis Khan: Treasures from Inner Mongolia
Provincial Museum of Alberta, Edmonton, Alberta, Canada, to July 1997

Masters of the Ocean Realm: Whales, Dolphins and Porpoises
Cincinnati Museum of Natural History, Cincinnati, Ohio, to September 1997.

Royal Ontario Museum, Toronto, Ontario, Canada, October 1997 to January 1998

Sharks! Fact and Fantasy
Rochester Museum and Science Center, Rochester, New York, to September 1997

Memphis Pink Palace Museum, Memphis, Tennessee, October 1997 to January 1998

Nassau County Museum, Port Washington, New York, February to May 1998

Stones from Heaven: Ancient Chinese Jade
Mingei International Museum of Folk Art, San Diego, California, to February 1998

A Museum for the Twenty-first Century

Mission, Change, and Opportunity

by Dr. James L. Powell

The purpose of the Natural History Museum, as defined in its mission statement, is "to advance knowledge and to enable people of all ages, backgrounds, and interests to understand and appreciate their natural and cultural heritage." Such a mission is timeless. A museum that wishes to continue to be relevant and to achieve its potential, however, must periodically change the manner in which its mission is interpreted so that it reflects changes in the natural world and human society.

Since the time when the great American natural history museums were founded (our museum was established in 1913), both the natural world and human society have changed dramatically, perhaps nowhere more than in southern California. These changes and the impending end of this century provide us with the opportunity, and indeed the obligation, to rethink the way in which the museum achieves its mission. In the process, it is natural that we ask whether and how the buildings in which the programs of the institution are conducted can be made to better serve our mission.

The Exposition Park museum holds some of the most beautiful spaces in this or any other city: witness the Rotunda, with its Three Graces, and the Foyer, with its giant, glowering reptiles, the Tamkin Dueling Dinosaurs. The external architecture of the building is hard to commend, however; and having grown somewhat like Topsy, it lacks efficiency. In the process of studying how the Exposition Park building might be improved, we have learned that to renovate it would cost more than anyone had imagined. The building can be augmented only in minor increments, which means that it is unlikely ever to house the twenty-first century natural history museum that we want to create. But the prohibitive cost of rehabilitation may present an opportunity. For not a great deal more money than a complete renovation would cost, we could build a new, world-class museum building and fill it with superb exhibits.

Any observer of American museums over the last few decades has noticed that whereas scores of new science centers have opened, no major natural history museums have been established. As we see from the example of our fine neighbor, the California Science Center, a successful new science center can indeed be built from scratch. Natural history museums, by contrast, being collections based, cannot be built unless the collections are available, and the great collections can no longer be acquired. Our collection, which our curators estimate would have a replacement value of $1.2 billion, in fact could not be replaced at any price.

For an understandable reason then, no new major natural history museum has opened in this country for many years. Some older museums, such as the American Museum of Natural History in New York and the Field Museum in Chicago, have chosen to renew themselves not by erecting new buildings but by remodeling their existing ones. As a result, although there are superb new natural history exhibits, there is no dramatic new natural history museum—no Bilbao, to make reference to the startling new Guggenheim Museum in that Spanish city.

Los Angeles's Museum of Natural History thus finds itself at the turn of the century with a world-class collection, a talented staff, and a dedicated group of supporters, but with a building that

cannot be made world class. The attractive solution is to build a new, state-of-the-art structure that makes an important architectural statement and fill it with new, permanent exhibits drawn from our vast collections.

We could do something no other major natural history museum has done—we could start fresh and in essence reinvent our public face. This is the opportunity that the trustees of the museum and I are now exploring. To achieve this goal will take a great deal of money, but it has been shown time and again that a sufficiently well-conceived, well-planned, and appealing project can attract the needed funds.

In the rest of this article, I will outline the program that would be mounted in this new museum. I begin by taking us back a century or more.

The World of Nature

Natural history museums were founded to celebrate the wonders of science and nature, at a time when these appeared to be without limit. Early museum officials believed, as did those who provided their collections and as humans had throughout the preceding centuries, that nature and the environment were ours to exploit. In spite of the disappearance of abundant species like the passenger pigeon, and the near-extinction of the once-multitudinous buffalo, few imagined that over the course of the twentieth century, not just one or two but thousands of species would be threatened with extinction and that our natural environment would be in crisis on many fronts.

Although biologists have identified 1.5 million species of animals, plants, and microorganisms, they calculate that far more species exist on earth—the true total may reach 10 million, or even 30 million. We simply do not know. But surely, one would think, 10 million species, much less 30 million, is such a vast number that biological diversity would not be threatened no matter how many extinctions could be caused by human activity. That view is wrong.

> *I am a member of a fragile species, still new to the earth, the youngest of creatures of any scale, here only a few moments as evolutionary time is measured. . . . We are only tentatively set in place, error-prone, at risk of fumbling, in real danger at the moment of leaving behind only a thin layer of our fossils, radioactive at that.*
>
> LEWIS THOMAS

We know from the study of fossil life that the average rate of extinction since life began to flourish has been about 2 to 3 species per year. However, biologists tell us that today the extinction rate is roughly 2 to 3 species per *hour*. Although such estimates are debated, if they are anywhere close to correct, the twenty-first century alone will see species extinctions numbering in the millions, and that assumes that the rate of extinction will not increase, which it has been doing inexorably throughout this century. Thus by the time the twenty-second century arrives, a large fraction of the biological diversity of the planet will be lost. This is not just theory; the new mass extinction has already begun, as a short selection from among many alarming statistics illustrates:

- Within the last century, nearly one-quarter of the world's forests and woodlands have disappeared, carrying with them innumerable species that had not yet been discovered and now never will be.
- Between 1982 and 1987—in just 5 years—20 percent of the tropical forest of the western Amazonian state of Rondônia disappeared.
- Within the last millennium, 2,000 resident bird species have disappeared from Pacific islands.
- Currently, 1,126 U.S. species are listed as threatened or endangered.

Biodiversity Matters

The collection of statistics on declining biological diversity and rising extinction rates presumes that these processes matter to our species. They do.

First, fulfillment of our most basic human needs—for food, shelter, clothing, and medicine—depends largely on animals and plants. In our search for new pharmaceuticals, we have only scratched the surface of the natural world; more than 250,000 plant species have been identified, yet only a fraction have been studied for their medicinal properties. To take one example, just a few years ago, scientists screening natural products for anticancer properties discovered a previously unknown substance called Taxol in the Yew tree of our Pacific Northwest. Taxol turned out to have just the cancer-fighting properties that the researchers were seeking. Yet Taxol is so unusual that, even after its molecule became known, it proved almost impossible to synthesize. Clearly, it makes sense to prevent the extinction of further plant species until their properties and potential are understood. Otherwise the next Yew may have become extinct before we find it.

Second, biological ecosystems provide essential benefits. Plants and soils

hold vital watersheds together and even influence local climates, as in the Amazon basin, half of whose rainfall is generated from within the basin itself. Ecosystems absorb and neutralize pollutants in the air, soil, and water.

Third, for an increasing number of people, the prevention of species extinction is an ethical or religious matter. We all understand that for our species to survive, individuals of other species must die; after all, we must eat something. But to destroy the last surviving member of an entire species is not merely to bring about the death of a single creature. Rather it is to terminate forever an important part of the great chain of being that stretches back to the beginning of life on earth 3.8 billion years ago. What right has one species—and a recently arrived one at that—to forever destroy another entire species? As Peter Raven, director of the Missouri Botanical Garden in St. Louis, eloquently puts it, "We have an absolute moral responsibility to protect our only known living companions in the universe." More and more religious people have come to share scientists' concern. If "His eye is on the sparrow," as the words of the old hymn declare, they wonder how people of faith can stand by while entire species are destroyed.

Southern California: A Natural Laboratory

Ultimately because of its location on the edge of a continent in one of the most geologically active regions on earth, California is blessed with greater geological and biological diversity than any state or province in North America. Not surprisingly, the state has more species listed as endangered by the U.S. Fish and Wildlife Service than any except Hawaii. Thus, for better or worse, southern California is a natural laboratory of biological diversity, complex ecosystems, and environmental issues.

As the largest natural history museum west of Chicago, located in the most populous city on the West Coast, our museum is in a position to demonstrate special leadership in addressing environmental topics. By drawing on the rich variety of wilderness areas and special habitats that surround us and that are so well represented in our collections, we have an opportunity to demonstrate vital concepts of biological diversity and environmental preservation to the people of the region.

Cultural Diversity

Los Angeles at the end of the twentieth century would be almost unrecognizable to Angelenos of the end of the nineteenth. Not only would the physical aspects of the city—its buildings and sheer sprawl—be on an almost incomprehensible scale, even more dramatic would be the change in its people. How could our predecessors from a century ago have imagined that Los Angeles today would be arguably the most culturally diverse city in the history of the world? That in the homes in which our school children live, nearly 100 different languages would be spoken? A museum that wishes to remain relevant must take note of these facts and act on them.

It is a fundamental tenet of this nation of immigrants that in ethnic and cultural diversity lies strength. Yet as we have seen in our own city and around the world, perceived differences among peoples can set them against each other. Clearly problems stemming from ethnic and cultural differences rank with species extinction in their seriousness.

Many institutions—schools, universities, churches, social agencies—are addressing issues arising out of cultural diversity. In Los Angeles, some ethnic groups have created museums to honor their own special heritage. As a result, we have such fine institutions as the Japanese American National Museum, the California African American Museum, the Latino Museum of History, Art, and Culture, and the Korean American Museum, with others—including a Filipino museum—being planned. What Los Angeles does not have is a museum that interprets its mission as focusing on and celebrating the many qualities and values that all ethnic groups have in common. Such a museum could promote understanding and help to bring all of us together.

Because the mission of the Museum of Natural History includes a focus on cultural heritage, it is appropriate for us to fulfill this role. Let this become the place where Angelenos come to discover not only what is distinctive about the many cultures and peoples of our city but what they share. United by understanding, Angelenos will work and stand together; divided by ethnic differences, we will falter and may fall.

The Museum's Role

It is appropriate, indeed even obligatory, for the Museum of Natural History to accept a greater role in addressing issues of biological and cultural diversity.

First, our collection of 33 million artifacts and specimens is larger than any other in southern California and contains the record of species, extant and extinct, from our region and the world, as well as a vast array of artifacts highlighting significant cultural developments and individual human accomplishments. We have the true and essential facts of the natural and cultural worlds at our command.

Next, of all institutions in Los Angeles, the museum has the most effective

and fitting combination of expertise in research, education, and exhibition needed to address these topics. Many of our curators already work on problems relating to the history of species and cultures; as noted, these issues form the essence of our mission. And all of the professionals on our staff are expert at dramatizing ideas and concepts for people of all ages through the use of the materials in our collections. This is what we do.

Finally, many of our employees, trustees, members, and volunteers became involved with the museum in the first place because they are committed to environmental and cultural issues. We do not need to persuade our museum family that diversity matters.

The task of helping to educate the public on issues of biological and cultural diversity is not only appropriate for the Museum of Natural History, there is simply no other entity that can or will take on the job, or do it as well. We have the collections, the professional expertise, and the mission. The needed funding we can gain.

Fulfilling Our Mission

In a recent article in the *New York Times*, Glenn D. Lowry, director of the Museum of Modern Art in New York, reminds us of one of the reasons for the enduring appeal of museums: "In our highly simulated postmodern culture, museums play what the philosopher Andreas Huyssens would call a compensatory role by providing authentic experiences." Visitors to our museum do indeed come face to face with the real world. To be in the presence of the remains of a 100-million-year-old pleisiosaur, to stand close enough to a polar bear to understand the meaning of its 9-foot height, to examine a nineteenth-century Pomo basket decorated with quail topknots or the homely animation stand used by Walt Disney in producing the first Mickey Mouse cartoon is to have an awe-inspiring encounter with what is true and tangible. Our displays allow people to measure their humanness against the scale of the rest of nature and to consider their connnections to people of the past and present. And the scholarship that informs our galleries and installations invariably proves that truth is stranger and more wonderful than fiction. The museum provides powerful experiences that can be had nowhere else.

Museums are the final repositories of the actual materials of natural history, and so of our understanding of the past, present, and future state of the natural world. . . . Even, or perhaps especially, in this "age of information," it is the physical objects of the earth and its life that must continue to hold a central place in our intellectual universe.

WARREN D. ALLMON

On any short list of problems facing society in the twenty-first century, those relating to the environment and cultural diversity must rank near the top. The need for public education on these issues is *vital*, in the strict sense of that word, and the full breadth and eloquence of the museum's collections can be used to that end. We are uniquely positioned to tell the grand story of how the earth and its living creatures have evolved over time. We can show how present biological diversity was achieved, why it is essential, and how—with the rise of our species—it has become threatened. We can show how the many ethnic groups in Los Angeles have been shaped by and have themselves shaped our great city, and how they will go on doing so.

Our vision is to mount this new program in a reconceived natural and cultural history museum that is a model for the twenty-first century. We want to design, fund, and create a new museum that will conjoin a dramatic building, state-of-the-art permanent galleries, and an integrated program of collections, education, exhibitions, and research. To end where I began—with our mission—in this way will we enable Angelenos and visitors from around the world to understand and appreciate our companions, in nature and in society, on the great, ongoing experiment that is Los Angeles, America, and the earth.

Quote by Lewis Thomas from *The Fragile Species*, Charles Scribner's Sons, 1992.

Quote by Walter D. Allmon from "The Value of Natural History Collections." *Curator*, volume 37, pages 82-89, 1994.

STATEMENT OF OPERATIONS

The Natural History Museum of Los Angeles County consists of two separate financial entities: the Los Angeles County Department of the Natural History Museum and the private, nonprofit Foundation of the Natural History Museum of Los Angeles County. The financial statement below demonstrates the level of funding developed and provided by each of these entities.

The year 1997–1998 was another that was financially quite successful. We ended the year with an operating surplus in both the foundation and county operating budgets. We further developed and refined financial and human resources policies and procedures, and we implemented new computing systems in both areas. The result has been better financial reports for the museum's Boards of Trustees and Governors as well as more accurate and timely operations.

While a large portion of foundation revenue is derived from admissions and membership ($3.16 million, including about $615,000 from the Petersen Museum), a significant portion also comes from grants, gifts, and contracts ($4.8 million). We had unrealized net gains on our endowment of more than $30.2 million, an unprecedented growth in endowment. Strong revenue generation allowed us to maintain our line of credit at a low level throughout the fiscal year, thus considerably reducing finance costs.

Over the course of fiscal year 1997–1998, we were able to make use of past county savings to resolve several deferred maintenance issues in the Exposition Park museum and to refurbish major parts of the museum's galleries and other public spaces. In fiscal year 1998–1999, we are continuing with that work at the Page Museum.

Revenues and Expenditures

Combined County of Los Angeles and Natural History Museum Foundation revenues and expenditures for the Natural History Museum of Los Angeles County, July 1, 1997, through June 30, 1998, and fiscal years 1995–1996 and 1996–1997

Revenues	**1995–1996**	**1996–1997**	**1997–1998**
Admission fees	$1,418,559	$1,432,776	$1,841,460
Investment income	1,401,505	996,996	1,060,453
Membership fees	722,274	691,212	705,047
Shops, cafeteria, museum use	1,353,380	1,425,52	1 1,717,439
Petersen Automotive Museum	2,419,721	1,697,622	2,492,692
Education, Exhibits revenues	787,082	487,642	1,296,009
Miscellaneous	642,217	2,479,339	778,312
Support			
Restricted grants and contracts	$2,301,613	$2,351,100	$3,842,048
Unrestricted gifts	1,060,426	965,094	961,144
County of Los Angeles appropriation	9,902,000	9,266,824	9,111,204
Total revenue	**$22,008,777**	**$21,794,126**	**$23,805,808**
Expenditures			
Public programs	$2,417,036	$2,090,820	$3,169,191
Petersen Automotive Museum	2,339,902	1 ,877,125	2,926,427
Research and Collections	2,614,293	2,691,589	2,469,762
Restricted grants and contracts	2,566,775	2,422,517	3,812,180
Shops, cafeteria, museum use	1,291,527	1,144,648	1,474,825
Development	729,967	565,824	714,207
Administration and Operations	9,179,353	8,499,622	8,208,702
Total expenditures	**$21,138,853**	**$19,292,145**	**$22,775,294**
Operating surplus (deficit)	**869,924**	**2,501,981**	**1,030,514**

Grants and Contracts

As of June 30, 1998

Ford Motor Company

$25,000, Linda Abraham, Support for supplemental education programs for *Africa: One Continent, Many Worlds*

Getty Grant Program

$10,300, Linda Abraham, Multicultural undergraduate internships in education

Maxwell H. Gluck Foundation

$943,000, Linda Abraham, Seamobile operation for 3 years

$847,000, Linda Abraham, Earthmobile operation for 3 years

Haynes Foundation

$107,192, Tom Sitton, The Bowron years: Transforming the future of Los Angeles, 1938–1953

Los Angeles City Department of Water and Power

$50,000, Robert J. Lavenberg, Training and support of DWP personnel in collection of water samples and optical data

Los Angeles County Parks and Recreation Department

$10,498, Karen Wise, Identify, locate, and evaluate the condition of archaeological documentation and collections from Vasquez Rocks

National Science Foundation

$269,000, Brian V. Brown, Systematics of ant-decapitating flies of the genus *Apocephalus*

$25,000, Arthur V. Evans, Partnerships for Enhancing Expertise in Taxonomy (PEET) program, Generation of taxonomic key and species catalog of the New World melolonthine scarab beetles, as part of a project with the University of Nebraska

$249,000, Kirk Fitzhugh, Transfer of polychaete collection from University of Southern California to Natural History Museum

$201,494, Robert J. Lavenberg, Computerization of fishes, amphibians, and reptiles of the Natural History Museum

$119,342, Joel W. Martin, Support cost of Intergovernmental Personnel Act assignment of Dr. Joel W. Martin to the National Science Foundation

$1,652,000, James D. Olson, Lost civilizations of the Tarim Basin

$118,000, Karen Wise and Science Education Specialist, Education Division, Museum Research Apprenticeship Program

The Ralph M. Parsons Foundation

$192,497, Julie Pfaffinger, Support of Parsons Discovery Center operations for 1998–1999

The Pfizer Foundation, Inc.

$25,000, Linda Abraham, Support for supplemental education programs for *Microbes: Invisible Invaders, Amazing Allies*

Southern California Edison

$4,654,142, Robert J. Lavenberg, Support for geographic information and analytical services, 1995-1998

U.S. Department of Agriculture

$7,800, Julian P. Donahue, Update of database of Lepidoptera of America north of Mexico

U.S. Department of Commerce

$10,000, John E. Heyning, Life history data from incidentally killed cetaceans

U.S. Department of the Navy

$13,590, Karen Wise, Reconciliation of archaeological research documentation with museum inventory and catalog of collection made by Charles Rozaire on San Miguel Island

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July 1, 1997, through June 30, 1998

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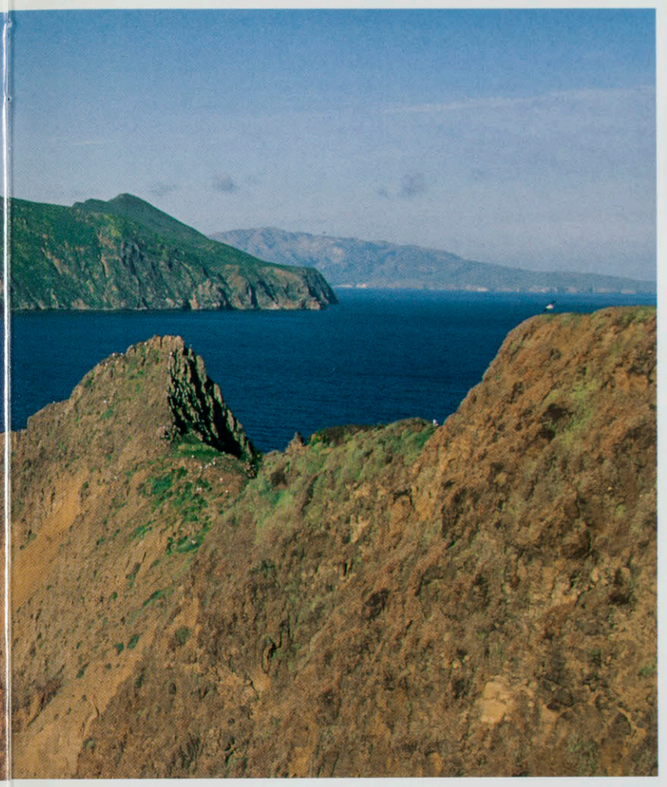

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A Western Gull *(Larus occidentalis)* circles above Inspiration Point *(above)*, at the east end of Anacapa Island, one of southern California's Channel Islands.

The complex seasonal confluence of currents and countercurrents off the California coast, and the upwelling of nutrient-rich waters that occurs there, support unique and diverse assemblages of marine life. Portions of the isolated Channel Islands and their offshore waters, where a number of rare species have evolved, have been designated a national park and marine sanctuary.

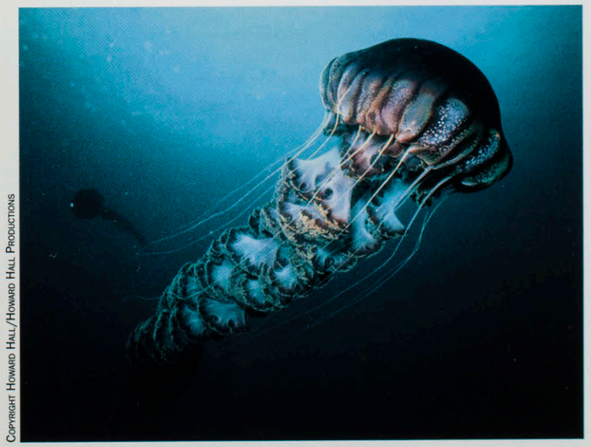
The museum is a center for research on the biodiversity of areas such as this, and the work of our scholars is extended by hundreds of loans of specimens sent out each year and many visits to the collections by other scientists.

Top left: Neosimnia aequalis, **a marine snail about 1 inch long, clings to its red gorgonian host and looks out at the photographer (its two black eye spots are located at the bases of sensory tentacles). The red spotted mantle of the snail is partially extended over its rose-colored shell, while its foot wraps around the gorgonian. The snail occurs below low tide near kelp beds at all of the Channel Islands. These animals, which are related to cowries but have a more slender shell, feed and lay their eggs on the gorgonians; eventually only the dark brown skeleton of the coral will remain.**

James H. McLean, curator of malacology, is working on an illustrated manual treating all species of shelled marine snails that occur in the northeastern Pacific Ocean from Alaska to the outer coast of Baja California. The book will cover approximately 1,360 species; the 265 that are new to science are from very deep water or remote areas, including poorly sampled regions near the Aleutian Islands, Alaska.

Top right: **This sand-dwelling *Ophiopsila californica,* a brittle star that is known to be bioluminescent, has adopted a typical posture, with its central disc buried in the sand and arms outstretched in the water current. The function of this behavior and the animal's natural history are enigmatic: the species is a shining example of California's understudied echinoderms.**

In 1998, Gordon Hendler participated in an echinoderm study cruise to the northern Channel Islands with scientists from the Tatman Foundation, the National Parks Service, and several other West Coast research centers. The sea stars, sea urchins, brittle stars, and sea cucumbers that he collected have been deposited in the museum's collections, to establish a baseline picture of local marine organisms so that changes in their diversity and distribution can be recognized in the future. In addition to checking specimens for "bald spots" and other signs of a debilitating disease that has been noted recently among California echinoderms, the divers looked for unexpected additions to the local echinoderm fauna that are the result of El Niño related changes in the currents and temperatures of our coastal waters. Information gathered on the expedition will be incorporated into the chapter on brittle stars that Dr. Hendler is preparing for an upcoming revision of "Light's Manual," the classic guide to California's intertidal invertebrates.



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Left: Chrysaora achlyos, **an enormous jellyfish whose arms and tentacles may trail up to 25 feet behind the bell of the animal as its swims. Prior to summer 1989, when huge numbers stranded along beaches of southern California, the species was not known to science; it was named and described in 1997 by Joel W. Martin, curator of crustaceans, and a team of associates.**

Dr. Martin was particularly interested in the species, the largest new invertebrate described in this century, because many marine vertebrates and invertebrates spend at least part of their life cycles feeding on or sheltered by jellyfish. The tentacles and arms of *Chrysaora achlyos* may harbor parasites or commensal species such as sea spiders, amphipods, young crabs and shrimps, and fishes, and this jellyfish may be an important part of the food web of our local waters. How such a large animal had escaped the notice of scientists for so long—and why it has not been seen since—are mysteries remaining to be solved.

Above: The tiny bluebanded goby *(Lythrypnus dalli;* to 2½ inches) is one of the most abundant gobies in southern California waters. Although all individuals start life as females, some later change sex to become males.

Assistant curator Christine Thacker studies the evolution and reproduction of gobies, a group that contains more than 2,000 species of small, bottom-dwelling fishes that live in both freshwater and marine habitats around the world. In addition to being an important component of intertidal and coral reef habitats, the Gobioidei includes species that climb waterfalls, walk on land, and live in symbiotic partnerships with shrimp. Dr. Thacker studies goby evolution from several perspectives, using data about morphology and development and information from DNA sequencing.

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Cathy McNassor, *Curatorial Assistant, Archives*

A complete list of the Natural History Museum's honorary staff members appears on the museum's Web page, at www.nhm.org/annual_report.

Several of the Natural History Museum's gallery interpreters gathered under the fin whale skeleton in the Ralph M. Parsons Discovery Center. *From left to right, top row:* Eric Meis, Jennifer Abaunza, Robert Howard, Audrey Walker, Jose Gonzalez, and Kamaron Sardar. *Center, standing:* Charon Harvey, Yvonne Lee, and Marina Oropeza. *Seated:* Celena Turney, Discovery Center Coordinator *(right),* and Roselee Jackson.

Members of a corps of two dozen gallery interpreters, the newest category of employees in the Education Division, welcome guests and orient them to the Exposition Park museum. Using an array of specimens and artifacts, they enable visitors to handle materials related to our exhibitions and galleries; they also conduct group tours, assist with the school tours and Discovery Center programs, and staff special events. The gallery interpreters' special training and infectious enthusiasm for natural and cultural history enriches visitors' experiences of the museum.

Produced as the March/April 1999 issue of TERRA, the magazine of the Natural History Museum of Los Angeles County

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PROGRAMS FOR MEMBERS AND VISITORS

Lecture and book signing

■ THE SEARCH FOR THE GIANT SQUID

Sunday, March 7, 2 p.m., Jean Delacour Auditorium, Museum of Natural History

It can grow 60 feet in length, possibly longer, and weigh more than a ton. It is spindle-shaped with eight grasping arms studded with toothed suckers, a huge beak, and two lidless eyes the size of dinner plates. Commonly referred to as the giant squid, *Architeuthys dux* is the least-known large animal on earth. In his book, *The Search for the Giant Squid* (Lions Press, 1998), Richard Ellis provides the first authoritative study of this elusive ocean creature, an invertebrate that has battled sperm whales, terrified fishermen through history, and intrigued scientists when it has occasionally washed up on shores around the world. A book signing follows the lecture. $7 members, $9 nonmembers, $5 students with I.D.

■ DID DINOS SOAR?

Sunday, March 21, 2 p.m., Jean Delacour Auditorium, Museum of Natural History

Are dinosaurs still alive today in the guise of birds? Join us as we explore this controversial topic: Dr. Jack Horner will present the case that birds are descended from *Tyrannosaurus rex* and *Allosaurus* and their relatives. And Dr. Larry Martin will defend the theory that certain nondinosaurian reptiles were the birds' true ancestors.

Dr. Martin of the University of Kansas, a leading avian paleontologist, has been publishing his research on the birds of the Mesozoic Era for 25 years. Dr. Horner, who is curator of paleontology at the Museum of the Rockies in Bozeman, Montana, and the recipient of a MacArthur Fellowship, is author of several books on dinosaurs and dinosaur collecting; his documentation of dinosaur nesting sites in Montana has fascinated the public as well as paleontologists.

Whichever theory you subscribe to, this will be an exciting afternoon. $7 members, $9 nonmembers, $5 students with I.D.

Lecture and book signing

■ HIDDEN MEN AND MAMMALS

Exploring New Guinea

Sunday, April 18, 2 p.m., Jean Delacour Auditorium, Museum of Natural History

Dr. Tim Flannery is one of the last true explorers. A principal research scientist at the Australian Museum, he is an expert on the fauna of New Guinea; years of close association with the island's preindustrial peoples have given him a special sensitivity to their unique culture and their struggles. Dr. Flannery is a gifted storyteller who allows his audience to experience intimate details of his harrowing adventures. Join him for this special presentation and feel the poignancy of the clash between modern values and the tribal way of life. After his talk, Dr. Flannery will sign copies of his book,

Brazilian free-tailed bat
(Tadarida brasiliensis)

Throwim Way Leg (Atlantic Monthly Press, 1998). $7 members, $9 nonmembers, $5 students with I.D.

Lecture and book signing

■ EARTHQUAKES

Sunday, April 11, 2 p.m., Jean Delacour Auditorium, Museum of Natural History

We live in earthquake country, but what can we do about it? In this fascinating lecture, Dr. Bruce Bolt, professor of seismology at the University of California, Berkeley, gives expert information about the latest methods for predicting and measuring earthquakes and tells us what scientists are saying about the risk factors for residents of different areas of California. You will learn what determines the size of a temblor, what causes tsunamis, and what kind of house is safest in a quake. Dr. Bolt, who is former director of the Seismographic Stations at the university, has been studying earthquakes and teaching about public safety for more than 30 years; he will sign copies of his book, *Earthquakes* (W.H. Freeman and Company, 1999), immediately after the lecture. $7 members, $9 nonmembers, $5 students with I.D.

■ MIX OF MUSIC

Saturday, April 24, 7 p.m., William S. Hart Museum

Enjoy music in the mansion when pianist Charlie Gould, who has played for MGM Studios for 20 years, presents a lively mixture of classical, baroque, romantic, and popular music; selections by Vivaldi, Mozart, Joplin, Gershwin, Porter, Rodgers, and others will be interspersed with your special requests. A reception immediately follows the performance. Seating is limited; for more information and reservations, please call 661/254-4584. $20 members, $25 nonmembers.

INSECT FAIR

Saturday and Sunday, May 15 and 16, 10 a.m. to 4 p.m., Museum of Natural History

Insect enthusiasts of all ages are "buzzed" about the 13th annual Insect Fair, presented by the museum's Insect Zoo and Lincoln Mercury. The largest event of its kind in the nation, the fair is fun for the entire family, with more than 60 exhibitors from around the world presenting both live and preserved arthropods.

Anything "buggy" can be found at the Insect Fair, from beetle jewelry to insect art. Have you ever wondered what an insect tastes like? Here's your chance to find out, with chocolate-covered crickets, cricket lollipops, and a host of insect "treats" offered by exhibitors and the museum's own Curator's Cafe. You can purchase books, toys, educational tools, and craft items with an insect theme. Children can touch hissing cockroaches, walking sticks, millipedes, and other arthropods and come face to face with rare and endangered insects. And special lectures and presentations will be offered throughout the weekend by Dr. Art Evans, Insect Zoo director, John Acorn of the PBS series "Acorn, the Nature Nut," and other experts. Outside the museum, visitors will encounter a "Pavilion of Wings" as they walk through our new butterfly house filled with hundreds of live butterflies.

The Insect Fair is free with museum admission, which is always free to members. For more information, contact the Insect Zoo at 213/763-3558 or e-mail to aevans@nhm.org.

California ground squirrel
(Spermophilus beecheyi)

ADULT CLASSES

■ UKRAINIAN EGG PAINTING

Saturday, March 27, 1 to 4 p.m., Education classroom, Museum of Natural History

The art of egg painting has been passed down in Ukrainian families for hundreds of years. In this enjoyable session, Christina Lupichuk—a master at the craft—shares the traditional techniques, and you'll create a beautiful painted egg to take home for Easter gift giving. All necessary materials for completing your project will be supplied. $34 members, $39 nonmembers.

■ COILING WITH COLOR

Saturday, April 24, 9 a.m. to 4 p.m., Education classroom, Page Museum

Learn to make an authentic coiled basket under the expert guidance of Judy Mulford, and then embellish your creation with colorful designs, shells, and charms (you can bring your personal treasures to add as well). You will use hand-dyed raffia to create a decorative pattern on the basket; you'll also learn several stitches as well as patterning and shaping techniques. All necessary materials are provided. $50 members, $60 nonmembers.

ADULT FIELD TRIPS

■ NATIVE AMERICAN ROCK PAINTINGS

Saturday, March 13, 10 a.m. to 3:30 p.m.

Spend a wonderful day in the Santa Barbara area exploring caves and canyons where Chumash people of long ago created beautiful and intricate paintings. We'll first visit the Santa Barbara Museum of Natural History to take a brief look at their excellent exhibitions. Then we will caravan to Painted Cave for a behind-the-gate tour and special presentations by experts on rock art and the Chumash culture. Our next stop is a 15-minute drive by car and an easy 1-mile walk to another set of the paintings. Participants provide their own transportation. Reserve your space early because this excursion has limited enrollment. $42 members, $49 nonmembers; $2 discount for registrations received by March 5.

A birding and natural history tour

■ SPRING IN THE OWENS VALLEY

Friday through Sunday, April 23 to 25

Spend the weekend in a country inn nestled at the foot of the eastern Sierra Nevada and enjoy nature walks and bird watching. More than 300 species of birds as well as scores of mammal and reptile species visit or live in this region, and we'll tour a variety of habitats where these animals nest and forage. Along the way, we'll visit the castle-carved cliffs of Red Rock Canyon and explore Fossil Falls with museum paleontologist Dr. Dave Whistler. There will be a wine and cheese reception and musical offerings by a local classical group.

Historian Marvey Chapman, horticulturalist Richard Potashin, and raptor specialist Floyd Bero will lead the field expedition. We'll explore wetlands and alkalai flats, visit the Los Angeles aqueduct, learn about water history, visit pastures inhabited by a variety of birds of prey, and be greeted by bursts of wildflowers; we'll even get instruction in Paiute pottery fired on an outdoor kiln. Two nights of lodging at the Winnedumah Hotel in Independence, all meals, and round-trip chartered motor coach transportation are included; we depart at 8 a.m. on Friday and return by 8 p.m. on Sunday. $450 members, $465 nonmembers; $50 extra for single accommodations.

■ OUT TO LUNCH

Gathering and cooking native plants

Saturday, April 10, 11 a.m. to 3:30 p.m.

Christopher Nyerges, an expert in Native American food preparation, leads this culinary adventure back to the time prior to Europeans' arrival on the continent. We will meet at a park near Pasadena, where we'll gather native plants and then prepare them in the traditional ways of the earliest Californians, making flour of acorns and cooking a tasty pancakelike dish. Mr. Nyerges will demonstrate the use of some of the treasures from his collection of Native American cooking implements. Invite a friend, and come "out to lunch." $35 members, $45 nonmembers; $2 discount for registrations received by April 9.

■ HIDDEN L.A.

Saturday, May 8, noon to 5 p.m.

Dr. Robert Winter, one of our most popular tour guides, will lead us on a discovery tour of all the wonderful places in the Los Angeles area that you never knew existed. After gathering at the Museum of Natural History, we'll set off by chartered bus to "undiscovered" locations. If you are interested in art and architecture and want to find new and exciting destinations close to home, this is the tour for you! Dr. Winter will sign copies of his book, *Hidden L.A.* (Gibbs Smith, 1998), which will be available for purchase on the tour. Please register early, as space on the bus is limited. $39 members, $49 nonmembers.

EDUCATOR WORKSHOPS

■ DESERT PALEONTOLOGY AND ECOLOGY

Investigations in Red Rock Canyon

Orientation: Wednesday, March 17, 4 to 6 p.m., Museum of Natural History. Field trip: Saturday and Sunday, March 20 and 21

Learn about the geological and paleontological history of Red Rock Canyon and its present-day plants and animals as you discover how scientists conduct field studies, develop your own observational skills, and plan ways to bring your experiences back to the classroom. In the orientation session, you'll be introduced to Red Rock and prepare for creating a curriculum unit at the course's conclusion. Saturday and Sunday will be spent in the field, where fossil hunting, plant surveying, and making casts of animal tracks are just some of the activities planned for you. Participants will meet at Red Rock Canyon at 9 a.m. on Saturday and camp out overnight; the program concludes at 2 p.m. on Sunday. Two

Virginia opossum
(Didelphis virginiana)

lunches, one breakfast, and one dinner in the field will be provided. $110; salary point credit is available. For more information, please call 213/763-3240.

■ THE TINIEST TEACHERS
Lessons from Insects

Saturdays, April 3 and 10, 8:30 a.m. to 5 p.m.

This hands-on workshop will introduce you to the fascinating world of insects and their relatives. On April 3, participants will meet at the Museum of Natural History to learn about insect biology and behavior as they create their own habitats, set up activities with live insects, and share tips on how to create an "insect-o-centric" classroom. You will receive your own copy of *Insects of the Los Angeles Basin* (Natural History Museum, 1993), a 500-page full-color field guide that is an invaluable household and classroom resource. On April 10, you will accompany Dr. Art Evans, entomologist and director of the Insect Zoo, on a nature hike to learn field collection techniques. $60; salary point credit available. For more information, please call 213/763-3240.

FAMILY PROGRAMS

Family field trip

■ DIGGING FOR FOSSILS
A Silverado Canyon Adventure

Saturday, May 8, 9:30 a.m. to 12:30 p.m.
Children 5 and older, with accompanying adult

Spend the morning excavating fossils up to 160 million years old with museum paleontologist Dr. J.D. Stewart, the local curator for the exhibition *The Great Russian Dinosaurs*. Bring your picks and shovels, and unearth ancient ammonites, snails, clams, and shark teeth. Dr. Stewart will help us identify our finds and make records just as museum scientists do. We'll meet at the Orange County site; you may wish to pack a lunch for a picnic following the program. Adult/child pair: $30 members, $40 nonmembers; half off for each additional person.

Children's class

■ IT'S THE PITS!

Saturday, March 13, 10 a.m. to noon, Page Museum. Children 7 to 9

The tar pits—smelly and gooey! With museum paleontologist Gary Takeuchi, you'll discover how scientists uncover the amazing animals that got stuck there during the last Ice Age, thousands of years ago. As you examine real specimens, you'll learn how bones are removed from the hardened asphalt. $20 members, $25 nonmembers.

■ THE WOLF
Real or Imagined?

Saturday, March 20, 10 a.m., Jean Delacour Auditorium, Museum of Natural History. Children 6 and older, accompanied by an adult

Meet Koani, a 100-lb gray wolf from Montana, and Indy, her dog companion. Wildlife biologist Patricia Tucker gives you a glimpse into the secret life of North America's most fascinating predator. Then documentary film maker Bruce Weide shares stories from myth and folklore that reveal the wolf that stalks human imagination. $7 members, $9 nonmembers, $5 children and students with I.D.

PUBLIC PROGRAMS RESERVATION FORM

By telephone: Use your MasterCard or VISA. Call the Education Division at 213/763-3534, weekdays, 8 a.m. to 4 p.m. Credit cards are accepted only with a minimum charge of $20.

By mail: Complete the form below, fill in the charge information or enclose a check payable to Museum Foundation, and return your order form and payment with a self-addressed, stamped envelope. The form may be duplicated. Mail to: *Education Division, Natural History Museum, 900 Exposition Boulevard, Los Angeles, CA 90007*

Important: Reservation, Waiting List and Refund Policies:. Preregistration is required for all classes, workshops, and field trips and is recommended for all other Education Division programs. Tickets to auditorium events may be purchased at the door on a first-come, first-served basis; seating is not reserved. Reservations are not necessary for Family Fundays. Applicants for filled programs will be placed on a waiting list and contacted if vacancies or rescheduling occur. If you have paid for a filled program, your payment will be refunded in 4-6 weeks.

Cancellations must be made at least 6 business days prior to the first day of an event for the registrant to be eligible for a partial refund. No refunds can be given for cancellations made in the 5 days before the event.

Dates and times of programs are subject to change, and class sizes are limited. Please call 213/763-3534 weekdays between 8 a.m. and 4 p.m. to verify program dates, times, and availability.

Special Assistance Available. If you wish to attend a museum event and require auxiliary aids or services, please contact the museums' Americans with Disabilities Act (ADA) Compliance Officer at least three (3) business days prior to the event. The ADA Compliance Officer may be reached by telephoning 213/763-3417 (voice) or by calling that number via California Relay Service at 800/735-2929 (TTY).

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■ JURASSIC PARK REVISITED

Saturday, April 10, 2 p.m., Jean Delacour Auditorium, Museum of Natural History. Children ages 8 and older with accompanying adult

Jurassic Park brought dinosaurs to life, but what was real and what was Hollywood? Dr. J.D. Stewart, curator of paleontology for the museum, shows that truth is actually stranger than fiction: as we view clips from *The Making of Jurassic Park,* he will discuss the differences between the movie's conception of dinosaur behavior and the latest scientific information on the subject. Then Stephen Rosenbaum, visual effects supervisor for Industrial Light and Magic, the company that helped develop the technology for the movie, will give an illustrated talk on the exciting behind-the-scenes action during the filming. *The Making of Jurassic Park* is available from Universal Studios Home Video. $7 members, $9 nonmembers, $5 children, students with I.D.

An evening hike

■ NIGHT LIFE IN THE MOUNTAINS

Friday, April 30, 6:30 to 9:30 p.m. Children ages 8 and older with accompanying adult

Naturalist Peter Rice leads an evening hike into the Santa Monica Mountains, where we will explore the varied terrain, sample edible plants, and discover the night life of the resident animals of Franklin Canyon. After sunset, we will study the Milky Way and hear stories of the Chumash Indians, the original southern Californians. The hiking is easy to moderately difficult. $20 members, $25 nonmembers.

Phainopepla *(Phainopepla nitens)*

■ BUTTERFLIES THAT FLUTTER BY

Saturday, May 8, 10 a.m. to noon, Education classrooms, Museum of Natural History. Children aged 7 and 8

Come and explore the amazing world of butterflies with museum educator Karen Nakashima. We will learn why butterflies have such beautiful wing patterns and how they change from caterpillars to the winged creatures that flutter around us. We will also get a special tour of a new Butterfly Pavilion. $20 members, $25 nonmembers.

Girl Scout sleep over

■ DINO-SNORES

Overnight, Friday and Saturday, May 7 and 8, 7 p.m. to 9 a.m., Museum of Natural History. Girl Scouts 5 and older, accompanied by an adult

Sleep in the shadows of *Tyrannosaurus rex* and *Triceratops horridus* or next to an African elephant family on our overnight adventure. We'll tour the Dinosaur Hall and *The Great Russian Dinosaurs*, join museum instructors in activities designed to enable you to earn patches and badges, and listen to stories about ancient reptiles. We will also meet some living relatives of the dinosaurs and other animals that live in the Discovery Center. Preregistration is mandatory; for more information, please call 213/763-3535.

Natural History Museum of Los Angeles County

Exposition Park, Los Angeles, California 90007

The Natural History Museum exists to advance knowledge and to enable people of all ages, backgrounds, and interests to understand and appreciate their natural and cultural heritage. The museum assembles, conserves, interprets, and holds in trust collections of irreplaceable objects from nature and human history. These collections reveal the history of the earth and the evolution and diversity of life and culture. They sustain programs of research, exhibits, education, and publication.

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